

COVINGTON & BURLING

191299

1201 PENNSYLVANIA AVENUE NW WASHINGTON, DC
WASHINGTON, DC 20004-2401 NEW YORK
TEL 202.662.6000 LONDON
FAX 202.662.6291 BRUSSELS
WWW.COV.COM SAN FRANCISCO

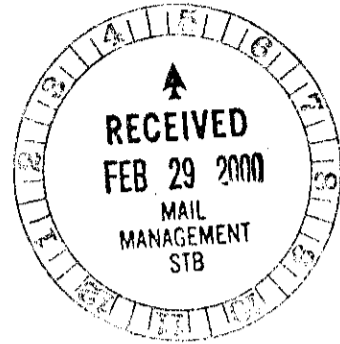
DAVID L. MEYER
TEL 202.662.5582
FAX 202.778.5582
DMEYER@COV.COM

February 29, 2000

BY HAND

Mr. Vernon A. Williams
Secretary
Surface Transportation Board
Office of the Secretary
Case Control Unit
1925 K Street, N.W.
Washington, D.C. 20423-0001

ENTERED
Office of the Secretary
FEB 29 2000
Part of
Public Record



Re: Ex Parte No. 582, Public Views on Major Rail Consolidations

Dear Mr. Williams:

Enclosed for filing in the above-referenced docket, please find an original and 10 copies of the Statement of David T. Scheffman. Also enclosed is a diskette containing the text of this document in WordPerfect 7 format.

In accord with the procedures adopted by the Board in this proceeding (see Decision No. 3, served February 17, 2000, p. 2), Mr. Scheffman's statement should be released to the public at the same time as the statements of other economists providing testimony in this proceedings, i.e., Thursday, March 9, 2000.

Please date-stamp the enclosed extra copy of this document and return it with our waiting messenger.

Thank you very much for your assistance.

Sincerely,

A handwritten signature in cursive script, appearing to read 'David L. Meyer'.

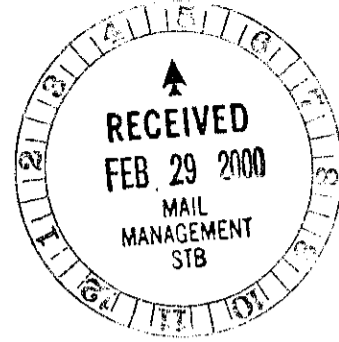
David L. Meyer

Enclosures

197299

ENTERED
Office of the Secretary
FEB 29 2000
Part of
Public Record

COMMENTS
OF
DAVID T. SCHEFFMAN



Qualifications

My name is David T. Scheffman. I am a professor of business strategy, marketing, and economics at the Owen Graduate School of Management at Vanderbilt University in Nashville, Tennessee, where I teach courses dealing with business strategy, financial analysis, valuation of intellectual property, and marketing. I am also an independent consultant, consulting on business, regulatory and litigation matters. I have written extensively on economic issues related to mergers and acquisitions and competition policy. I received my Ph.D. in economics from the Massachusetts Institute of Technology.

From 1979 to 1988, I was an economist at the Federal Trade Commission. Between 1983 and 1987, I was the head antitrust economist in the Bureau of Economics and supervised FTC economists' participation in all antitrust investigations. From 1985 through 1988, I was the Director of the Bureau of Economics and supervised FTC economists' participation in all FTC matters. Along with matters under the jurisdiction of the FTC, I regularly participated in filings with other federal and state agencies on issues of economics, competition, and public policy.

Since leaving the FTC, I have been involved in extensive research, teaching, and consulting on mergers and acquisitions. Over the years, I have been involved in intensive investigations of the potential efficiencies and competitive impacts of approximately 200

mergers. While at the FTC, I was involved in a number of antitrust investigations and analyses involving transportation issues. I have worked as a consultant on several major proposed mergers, including some in the rail industry, and have submitted testimony to the Surface Transportation Board in connection with the UP-SP merger application. A current version of my curriculum vitae is attached.

Overview

Based on my extensive academic, government and business experience with mergers and acquisitions, I respectfully offer the following comments on the public interest factors that should be considered when evaluating a merger among Class I railroads. Surface Transportation Board members have been quoted as asking for comments in this proceeding on "new rules of the road" for large railroad mergers. Union Pacific retained me to offer my own independent opinions on these subjects.

In my opinion the STB should address all public interests relevant to its authority in evaluating any future merger of Class I railroads. In making public interest determinations, the ICC and the STB have traditionally considered only a transaction's claimed benefits and its potential harms to competition, which the agency remedied with conditions. The agency limited its inquiry to the particular transaction before it.

As is apparent from the public debate about the recently announced CN/BNSF consolidation, however, the primary potential adverse consequences of this and any similar transactions at this time are external effects on the rail industry as a whole. These include the likelihood that this transaction will quickly trigger further substantial consolidations, the possibility that it will harm service and distract rail management from fully addressing service

concerns and service improvements and investments in capacity, and increased pressure for re-regulation of the industry. In evaluating the impacts of proposed actions, economists routinely attempt to assess external impacts as part of their analysis. Indeed, an economist would conclude that an analysis of a public policy issue was incomplete if it ignored significant externalities.

1. The Unique Circumstances of the Rail Industry Today

The railroad industry is in a unique situation in its history:

First, there are fewer major railroads than ever before, with only six large systems serving North America above the Mexican border. The reduced number of carriers has many consequences, including effects on how railroad managers behave strategically.

Second, shippers are restive and many are dissatisfied. Service problems followed several recent mergers, and many shippers feel that they lack competitive alternatives. As a result, some shippers and shipper organizations are seeking fundamental changes in the regulatory framework that governs the railroad industry.

Third, railroad service has been uneven. Service in the West appears to have largely recovered from problems that followed recent mergers, but in the East the recovery is still underway. Many shippers believe that railroads have not matched the service improvements achieved by other transportation modes.

Fourth, the railroad industry is in financial turmoil, in part because of the prospect of more large mergers. Stock values, already low relative to most other major sectors, have tumbled in recent months. At the same time, service improvements and capacity additions continue to require very substantial financial expenditures.

Against this background, in my opinion it is appropriate for the STB to consider the full range of public interest issues in its evaluation of railroad mergers.

2. Downstream Effects

The STB has decided to consider whether the CN/BNSF consolidation would stimulate additional mergers among large railroads. Similar consideration is appropriate for any future proposed merger among the remaining Class I railroads, because mergers of these railroads will almost certainly directly lead to further major consolidations. This is so for several reasons:

As a result of numerous prior consolidations, we are down to four major carriers in the United States and only six major carriers in North America north of the Mexican border, along with one or two smaller but significant carriers such as KCS. My study of the railroad and other industries leads me to conclude that the six major carriers are in a game of "musical chairs." Each carrier is keenly aware of the commonly voiced expectation that, absent government restraints, there will eventually be further substantial consolidation of the North American rail industry, perhaps down to two major transcontinental/north-south carriers. Each carrier wants to have a choice as to which other carriers it marries; no carrier wants to be left without a merger partner, or with only a single choice.

By moving first, a railroad hopes to achieve three objectives. First, it hopes to pair with its preferred partner. BNSF's public statements confirm that it believes it is pairing with the dominant railroad in Canada. Second, the first mover hopes to obtain more favorable terms in negotiating a combination. The fewer options one has in negotiation, the weaker one's position. By moving first, a railroad management can expect to get a better deal for its

shareholders. Finally, by moving first railroad management hopes to gain an advantage on its competitors. As a result, in a business like railroading, with few big players and no realistic chance of new entry, the pressure on each firm to act before others is strong. As the process of consolidation proceeds, the pressure grows. We have seen this pattern in a number of industries, including automobiles, oil, telecommunications, and electric power.

Game theory confirms that, in a game with a fixed number of players, significant competitive moves by one player are likely to stimulate countermoves by the other players.¹ The major countermoves to consolidations for the remaining players are very limited in this situation: they can do nothing or they can seek to engage in mergers or analogous transactions with other players. Even though in the railroad industry the optimal *unilateral* strategy may be to concentrate on making operational improvements, raising service levels, and adding capacity to the existing network, once two carriers propose a merger, the remaining carriers will be forced to assess their own merger possibilities. Waiting increases the likelihood that the most desirable merger partner will no longer be available, or that the terms of a transaction will be more strongly determined by the eventual partner.

Because other carriers may choose to merge, each carrier is led, for defensive reasons, to go forward with a merger that it might otherwise wish to postpone or not undertake at all. This is, in part, the classic "prisoner's dilemma," *i.e.*, since you are affected by what other parties *may* do, you take defensive actions that would otherwise not be your first choice. Follow-on mergers have been a common feature in many industries (*e.g.*, consider the recent history in

¹ See, *e.g.*, O. Shy, *Industrial Organization, Theory and Applications* (1996); R. Gibbons, *Game Theory for Applied Economists* (1992).

the oil, and automobile industries), including network industries (*e.g.*, airlines, electric utilities, and telecom).²

The railroad industry exhibits the same pattern. Major consolidations in the rail industry have occurred in "bunches," in part reflecting competitive and strategic dynamics, with action and response patterns. This trend continued in the 1990s: the merger of BN and Santa Fe in 1995-1996 was followed in rapid succession by the UP-SP merger, the CSX and NS acquisition of Conrail, and the CN/IC consolidation. Other potential major transactions have been actively investigated. There is every indication that this will happen again. The limited number of viable merger partners greatly increases the incentive to react.

In these circumstances, there can be little doubt that the CN/BNSF proposal, if approved, would be a catalyst for further mergers. Securities analysts correctly note that other carriers are likely to follow suit within a short period of time.³ While the STB in the past has not considered as part of its analysis the prospect that a transaction will trigger further mergers, at this point in industry history it is appropriate to change that approach.

² See, *e.g.*, G. Gorton, M. Kahl & R. Rosen, *Eat or Be Eaten: A Theory of Mergers and Merger Waves*, American Finance Association, Boston, Jan.7-9, 2000.

³ See, *e.g.*, reports issued by Credit Suisse First Boston, Jan. 31, 2000 ("... if we look back over the past thirty years or so we cannot find an instance where a large merger occurs in isolation"); Donaldson, Lufkin & Jenrette, Jan. 25, 2000, p. 2 ("... does Burlington management really expect their competitors not to try to optimize their networks as the competitors' competitor (i.e., BNI/CNI) gets stronger? We don't think so."); Morgan Stanley, Jan. 28, 2000, pt. 1, p. 3 ("... if the BNI/CNI merger doesn't get outright rejected by the STB or shareholders by May or June, we can expect more big merger news to soon follow, with only 2 major players left standing.")

The STB therefore faces an important public policy choice as it considers the CN/BNSF transaction, as it would in considering any other Class I merger proposal. As now configured, the railroad industry is perched on another round of substantial consolidations. If the Board approves a Class I merger, it will further increase the pressures on the remaining railroads to merge. In my opinion, the STB must determine now whether it is in the public interest to travel down that path.

3. Implications for Service

One of the more important factors that created the unique environment in which the railroads now find themselves is shippers' unhappiness about the quality of railroad service. Many shippers have expressed unhappiness with railroad service even when there has been no merger and even on the best railroads. Shippers have become accustomed to the reliability and responsiveness of air and motor carriers, which usually can predict within a few hours when a shipment will arrive at a receiver's dock. If there is a delay, a truck driver calls a receiver on a cell phone to provide an update. By comparison, most railroad service is erratic and unpredictable. Even when a railroad provides "on time" service, it may fail to meet its customer's service needs by delivering a day or two earlier than the shipper expected.

Each of the major railroad mergers of the last few years was followed by service disruptions. The UP service crisis of 1997-98 was probably the most severe, but the ongoing service problems in the eastern United States following the Conrail breakup may be proving more difficult to cure. The BNSF merger caused less severe problems, but did experience some problems. For example, BNSF's Chairman in 1998 said, "We have screwed it up," and in 1997 he called BNSF's intermodal service "terrible."

Implementation of mergers is a very difficult process. In my extensive experience with mergers in many industries, I have found that it is fairly common for managements' attention to be somewhat diverted by the pressures of merger implementation. In many industries, the process of attempting to implement mergers leads to various dislocations or "service problems." Mergers may cause service to decline, or prevent it from improving, by distracting management attention from the core business of reliable transportation. In an industry like railroads, in which the industry is still moving to best practices and still at various stages of implementing past mergers, I would expect significant loss of attention to railroad service improvement if the railroad industry pursues another round of mergers. Merger proposals and merger implementation are also likely to divert attention from new initiatives for inter-railroad cooperation.

In my opinion, at this unique point of railroad industry history, the STB should fully take into account the risk and resulting costs of potential service disruptions from any mergers it permits and from any mergers likely to follow in an evaluation of the *net* benefits of further substantial consolidations at this time. Even if service deterioration can be avoided, the STB should evaluate the disruptive effect of railroad mergers on service improvement and inter-

railroad cooperation. All of these harms are properly considered as part of a public interest calculation.

4. Financial Issues

Initiation of a new round of merger activity also may lead railroads to delay much needed investment in their systems. The rail industry has required and will continue to require very substantial capital investments. The rate of capital investment has increased markedly in recent years. In 1989-91, capital spending by Class I railroads equaled 13 cents per dollar of revenue. In 1996-98, this had increased to 21 cents per revenue dollar. Internally generated cash has been below the level needed to fund capital spending in every year since 1980.

Demands for further substantial investments are not going to abate. In fact, the industry is approaching the point where the existing level of capacity will have to be substantially increased. Rail freight productivity indices for Class I carriers show that, although tons carried per employee has increased since 1990, freight is moving on the networks more slowly. The indices for train hours/car miles and train hours/revenue ton miles have declined by more than 15 percent since 1990, indicative of congestion in the overall network. Individual carriers will be faced with the need to make significant long term investments in capacity expansion. In addition, a number of carriers will have to make substantial investments in new technologies and state-of-the-art terminals. Mergers between carriers will divert resources and attention from this issue.

If new merger activity distracted railroads from making these important service and capacity improvements, there could be significant costs in the long run. The past few years of strong performance of the North American economy have been a major factor underlying the

improvement of financial performance of the major carriers. Even given the strong economic growth, overall rail traffic has grown at a rate considerably less than has the economy as a whole. Although the financial performance and health of the industry have improved in recent years, the rate of return on equity has been poor. Based on Fortune 500 data, Class I railroads had a lower return on assets than the Fortune 500 median in 10 of the 14 years from 1985 to 1998. The *average* rate of return on shareholders equity for Class I carriers over the period 1995-98 equaled a paltry 9.6%.

A significant downturn in the economy will have a large impact on all major North American carriers. In the past economic downturns, railroad traffic has declined, leading to lowered profits for the carriers. In 1991, the start of a very mild and short-lived recession in the U.S., the average rate of return on shareholders equity for Class 1 carriers was *negative*. Thus, a period of consolidation accompanied or followed by a significant economic downturn will put additional pressures on financial and other resources of the industry.

5. Regulatory Considerations

In my opinion, it is also appropriate for the STB to consider whether a proposed merger between large railroads will result in changes to the regulatory environment, and to consider the effects of those changes. From an economic perspective, the threat of new regulation should be considered as part of any public interest calculation, whether the regulation would result from STB action or from new legislation.

It is already clear that further consolidation among large railroads will increase the likelihood of federal legislation. The announcement of the proposed CN/BNSF transaction has stimulated and strengthened calls for re-regulation of the rail industry. This externality

would bring serious consequences for railroads, as well as for shippers and for the public as a whole.

Pre-Staggers Act rail regulation left U.S. railroads in desperate shape.⁴

Deregulation, primarily the Staggers Act reforms, brought the railroads out of a long decline and set them on a path toward financial recovery. Both railroads and shippers have benefitted greatly from the productivity improvements that have occurred since the Staggers Act reforms. Railroad costs have declined in both real and nominal terms since 1980, and the overall average rail rate declined by more than 50% in real terms over that period. Past consolidations played a role in these improvements, but the ability to operate in an environment that is relatively free of onerous regulatory burdens was a key factor. A return to regulation could be disastrous for the industry and for shippers.

The likelihood of new regulatory controls has probably never been higher. Many of those who want new regulation view prior mergers as having created the need for regulatory change. Some shippers believe that mergers reduced their competitive options. Many shippers demand new regulation because of frustration with service problems that followed the BNSF, UP/SP and Conrail transactions. As a practical matter, the STB must take both the probability and effects of potential new regulation into account in determining whether large railroad mergers are in the public interest.

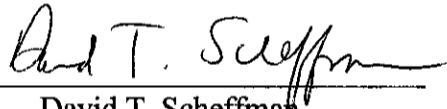
⁴ Canadian railroads also suffered under government regulation until 1987. See N. Bonsor, *Competition, Regulation and Efficiency in the Canadian Railway and Highway Industries*, Essays in Canadian Surface Transportation, Fraser Institute, 1995.

6. Merger Benefits

Past mergers have eliminated much of the excess capacity and inefficient duplication in rail networks. Mergers of the remaining carriers would be end-to-end. It is likely that many of the efficiency benefits of such mergers could be achieved through various interline coordination measures short of merger. Indeed, absent further major consolidations in the near future, I would expect that the railroads would be more active in exploiting the potential benefits of interline cooperation. It is appropriate to consider how any anticipated benefits that might be achieved through such a merger compare with the benefits that could be achieved under the status quo. Further, potential merger benefits are not necessarily permanently denied. The STB could decide at some point in the future that the industry had evolved sufficiently to permit another round of consolidations.

Conclusion

This is a unique time in the history of the industry. Although mergers can be beneficial, they can also be disruptive. Further major consolidations at this time would appear to have modest potential benefits. The potential costs, however may be substantial. This could be a good period for the industry and the individual railroads to strengthen and improve service, add capacity, and fully explore the potential benefits of interline cooperation. This could also be a good period for the STB to carefully study the full impacts of past consolidations (particularly the CN/IC transaction, which could shed light on the potential benefits and costs of further end-to-end consolidations), and the financial and service performance arising from a period without major distractions that would arise from another round of consolidations. Thus, if Class I railroads present proposals for consolidations to the STB, I respectfully recommend that the STB take into account the totality of public interest issues that would arise from such proposals.



David T. Scheffman
February 29, 2000

CURRICULUM VITAE
February 2000

DAVID T. SCHEFFMAN

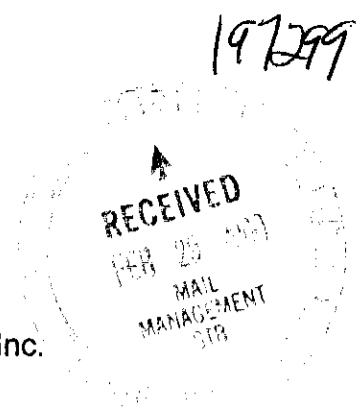
CURRENT POSITION:

Director
LECG, a Subsidiary of Navigant, Inc.

and

Professor of Business Strategy and Marketing
Owen Graduate School of Management
Vanderbilt University

ENTERED
Office of the Secretary
FEB 29 2000
Part of
Public Record



ADDRESS:

david_scheffman@lecg.com

OFFICE:

LECG, Inc., subsidiary of Navigant Consulting, Inc.
666 3rd Ave., 20th Floor
New York, NY 10017
646-227-4233 or 646-227-4200
FAX 646-227-4270

HOME:

160 W. 66th St., Apt. 46E
New York, NY 10023
(212)-799-6693

MARRIED TO:

Cathy A. Schutz

DATE AND PLACE OF BIRTH:

December 1, 1943
Milaca, Minnesota

UNDERGRADUATE STUDIES:

University of Minnesota, 1964-67
Major: Mathematics, Minor: Economics
Degree: B.A., Magna Cum Laude, 1967.

GRADUATE STUDIES:

Massachusetts Institute of Technology, 1967-71,
Ph.D. (Economics), 1971.

DOCTORAL DISSERTATION:

"Two Essays in Economic Theory," written under
P.A. Samuelson, R.M. Solow, and F.M. Fisher.

ACADEMIC HONORS

*Magna Cum Laude, Phi Beta Kappa,
Beta Gamma Sigma*

SCHOLARSHIPS:

Sigma; NSF 2-year intermediate fellowship.
NSF 1-year dissertation fellowship.
Canada Council Sabbatical Fellowship, 1978-79.
Visiting Scholar, University of Minnesota, 1978-79.

OTHER AWARDS, etc.:

Who's Who, various editions.
Paper with Pablo Spiller on "Econometric Market
Delineation" was cited with the Highest Quality
Rating by ANBAR Electronic Intelligence.

PAST POSITIONS HELD:

Justin Potter Professor of
American Competitive Enterprise and
~~Professor of Business Strategy and Marketing~~
Owen Graduate School of Management
Vanderbilt University

Visiting Scholar
U.S. Sentencing Commission
Washington, DC, 8/88-6/89.

Director (Civil Service SES 6)
Bureau of Economics
Federal Trade Commission
Washington, DC, 7/86-9/88

Acting Director (Civil Service SES 5)
Bureau of Economics,
Federal Trade Commission
Washington, DC, 10/85 - 7/86

Deputy Director, Antitrust and Competition Analysis (Civil Service SES 5)
Bureau of Economics,
Federal Trade Commission
Washington, DC, 5/83 - 7/86

Adjunct Professor, Georgetown University Law Center, 1985

Associate Director for Special Projects
Bureau of Economics
Federal Trade Commission,
Washington, DC, 3/82 - 5/83

Professor of Economics (Tenured) and Director,
Institute of Applied Economic Research
Concordia University
Montreal, Canada, 1982-83

Senior Economist (GS 15)
Bureau of Economics, Federal Trade Commission
Washington, DC, 7/79 - 3/83

Associate Professor (Tenured)
University of Western Ontario, 1975-81

Visiting Scholar, University of Minnesota, 1978-79

Assistant Professor, University of Western Ontario, 1971-75

Lecturer, Boston College, 1970-71

Instructor, M.I.T., 1970-71

PROFESSIONAL EXPERIENCE:

Teaching and Training:

MBA and Executive MBA:

Current teaching: Business Strategy, Business Strategy for Consulting and Financial Analysts, The Management and Valuation of Intellectual Property, Brand Equity, Marketing, Pricing, Procurement, Distribution to MBA, Executive MBA students, International Executive MBA students, and various Executive Education groups.

Member of Owen Graduate School of Management Curriculum Review and Core Curriculum Revision Committees.

I have co-led groups of MBA students on trips to Eastern Europe, Asia, and Latin America. The product of the trips was student papers on business and public policy issues in the countries that were visited.

Executive Education:

Marketing, new product development, pricing, strategic planning, organizational development, strategy and operations for banking executives, strategy and operations for credit union executives.

Past teaching:

Statistics and the Law (at Georgetown University Law Center), Graduate and Undergraduate Economic Theory, Industrial Organization and Regulation, Statistics and Econometrics, International Trade, Capital Theory and Uncertainty.

Served as head or member of Ph.D. examination committee for microeconomics, mathematical economics, industrial organization, and econometrics.

Thesis Supervision:

Principal Supervisor of six Ph.D. candidates at U.W.O.
Committee member for seven other Ph.D. candidates at U.W.O.
Committee member for one Ph.D. candidate at Vanderbilt.

PROFESSIONAL ACTIVITIES:

Member of Owen MBA curriculum committee -- participated in development of new curriculum for MBA program and new courses for EMBA program.

Refereeing for *American Economic Review*, *Journal of Economics and Management Strategy*, *Rand Journal*, *Journal of Industrial Economics*, *Journal of Law and Economics*, *Review of Industrial Organization*, *International Review of Law and Economics*, *Managerial and Decision Economics*, *Journal of Political Economy*, *Canadian Journal of Economics*, *Economic Inquiry*, *Review of Economic Studies*, and *Journal of Public Economics*. Refereeing of research proposals for NSF, SSHRC.

Research papers presented on numerous occasions at universities and national and international conferences.

Developed and organized national conferences in Canada and conferences held at U.W.O., Concordia University, and FTC. Director of Bureau of Economics Seminar

Program, FTC, 1982-1986.

Member of: *American Economic Association, American Management Association, American Marketing Association, Strategic Management Society, Western Economic Association, Southern Economic Association.*

COMMUNITY SERVICE, ETC.

Ex Officio Member, Long Range Planning Committee, *Cumberland Museums*, Nashville, TN

Consultant to *The Vital Center*, Nashville, TN

CONSULTING EXPERIENCE:

Consultant to a number of companies on issues involving business strategy, strategic planning, leadership and organization development, new product development, brand equity and brand extensions, marketing, pricing, distribution, purchasing.

Consultant on antitrust, distribution, contract, intellectual property, and consumer protection litigation.

Consultant to the Federal Trade Commission, Department of Justice, U.S. Sentencing Commission, Canadian and Ontario government agencies, including the Canadian Bureau of Competition Policy and Competition Tribunal.

Consultant to *The Executive Committee*. Presentations on pricing strategy and tactics to groups of CEOs of small to medium sized companies.

Consultant to state of Alaska re: proposed BP/Amoco acquisition of ARCO.

TESTIMONY AND OTHER RELEVANT EXPERIENCE

Experience with well over 200 industries. Involved in a large number of antitrust, advertising, and consumer protection matters at the FTC during 1979-83 and in all antitrust matters at the FTC from 1983-88. Involved in all consumer protection and advertising matters, economic studies and regulatory filings at the FTC 1985-88. Dozens of presentations to the Commission at the FTC on antitrust and consumer protection matters.

Consulted on numerous merger and joint ventures and federal agency antitrust and consumer protection investigations, and have made numerous presentations at the FTC and at the Department of Justice. Retained to testify on several number of matters that were settled or otherwise resolved before deposition or trial testimony.

Testimony and consulting on litigation involving: a great variety of antitrust issues (conspiracy, monopolization, mergers and acquisitions, vertical, Robinson Patman), civil conspiracy, distribution relationships, commercial disputes, marketing, pricing, advertising, deception, brand equity, intellectual property, RICO, class certification, and damages.

Specific Testimony, Expert's Reports, Depositions, etc.:

Ellis Simon, et al. v. Philip Morris Incorporated, et al., U.S. District Court, Eastern District of New York. Issues: Class certification, conspiracy. Jim Eiszner, Shook, Hardy & Bacon, Kansas City, on behalf of defendants.

FTC et al. v. Equinox International Corp et al., U.S. District Court, Nevada. (Report 2000). Issues: Alleged pyramid scheme, damages. Phillip Sechler, Williams and Connolly, Washington, D.C., on behalf of Equinox.

Blue Cross and Blue Shield of New Jersey, et al., v. Philip Morris, Incorporated, et al., U.S. District Court, Eastern District of New York. (Report 2000). Issues: Conspiracy, RICO, Antitrust. Peter Bleakley, Arnold & Porter, Washington, D.C., on behalf of defendants.

Laser Industries, Ltd. and Sharplan Lasers, Inc. v. Reliant Technologies, Inc., U.S. District Court, Northern District Of California, Oakland Division. (Report and Deposition 1999). Issues: Antitrust counterclaim, market definition, monopolization, damages. Charles Ossola and Asim Varma, Arnold & Porter, Washington, D.C., on behalf of Laser Industries.

Robert A. Falise, et al., as Trustees v. The American Tobacco Company, et al., U.S.

District Court, Eastern District of New York. (Report 1999). Issues: Conspiracy. Dan Webb, Winston & Strawn, Chicago, IL, on behalf of defendants.

Sandwich Chef of Texas, Inc. et al., v. Reliance National Indemnity Company, et al., U.S. District Court, Southern District Of Texas, Houston Division. (Report and Deposition 1999). Issues: RICO, Class Certification. Randall A. Hack, Lord, Bissell & Brook, Chicago, on behalf of defendants.

The National Asbestos Workers Medical Fund, et al. v. Philip Morris Incorporated et al., U.S. District Court, Eastern District of New York. (Report 1999). Issues: RICO, fraud, deception. Peter Bleakley, Arnold & Porter, Washington, D.C., on behalf of defendants.

Conwood Company, L.P. et al. v. USTC, et al., U.S. District Court, Western District Of Kentucky, Paducah Division. (Report and Deposition 1999). Issues: Antitrust, market definition, monopolization, exclusion, business practices, damages. Neal Stoll and James Keyte, Skadden, Arps, Slate, Meagher & Flom, on behalf of USTC.

Foodarama Supermarkets, Inc.; et al. v. American Insurance Company; et al., State of Pennsylvania, Court Of Common Pleas, Philadelphia County, Civil Division. (Report 1999). Issues: Conspiracy, contracts, fraud, class certification. Randall A. Hack, Lord, Bissell & Brook, Chicago, on behalf of defendants.

American Association of Retired Persons, et al. v. National Surety Corp., et al., Wayne County Circuit Court of Michigan. (Report 1999). Issue: MI antitrust, conspiracy, class certification. Randall A. Hack, Lord, Bissell & Brook, Chicago, on behalf of defendants. *Northwest Laborers-Employers Health and Security Trust Fund, et al. v. Philip Morris Incorporated, et al.* (U.S. District Court, W.D. Washington) (Supplementary Report 1999). Issues: Antitrust, restraint of trade, collusion, conspiracy, fraud, and RICO. Robert McDermott, Jones, Day, Cleveland on behalf of defendants.

Suzuki Motor Corporation Japan v. Consumers Union of United States, Inc. (U.S. District Court, Central District of California, Southern District) (Expert Reports and Deposition). Issues: product disparagement, damages. Sawnie McIntire, Beirne, Maynard & Parsons, Houston, on behalf of Suzuki.

Polaris Industries, Inc. v. Mihai Rasidescu (U.S. District Court for the District of Minnesota) (Expert Report 1998). Issues: Trade secrets, new product development, strategic planning, management and organization, employment contracts. Robert Schwartzbauer, Dorsey & Whitney, Minneapolis, on behalf of Bombardier.

Iron Workers Local Union No. 17 Insurance Fund and Its Trustees, et al. v. Philip Morris Incorporated, et al. (U.S. District Court N.D. of Ohio) (Expert Report 1998, Deposition and Jury Trial Testimony 1999). Issues: Antitrust, market definition, collusion, conspiracy, monopolization, federal and state RICO, deception, state statute conspiracy). Robert Weber, Jones, Day, Cleveland and James Eiszner, Shook, Hardy & Bacon, Kansas City, on behalf of defendants.

Berco Resources, Inc. v. Amerada Hess Corporation and Western Gas Resources, Inc. U.S. District Court, District of Colorado, Civil Action No. 97-WM-1332. (Expert Report 1998, Deposition 1999). Issues: Antitrust, damages. Gary Davenport, McGloin, Davenport, Severson and Snow, Denver, on behalf of Western Gas Resources, Inc.

Lake Hill Motors, Inc. v. Yamaha Motor Co. Ltd. et al. (U.S. District Court N.D. of Mississippi, Eastern Division) (Expert Report, 1998). Issues: Antitrust, vertical relationships, market definition. J. Brook Lathram, Burch, Porter & Johnson, Memphis, on behalf Yamaha.

Thomas & Betts Corporation v. Panduit Corp., (U.S. District Court, No. District IL, Eastern Division) (Expert Report, 1998). Issues: Trade Secrets. George Sanders, McBride Baker & Coles, Chicago, on behalf of Thomas & Betts.

E.I. DuPont, Inc. v. Forma-Pack, Inc. (Superior Court of CA, County of San Joaquin). (Deposition, 1998). Issues: Antitrust, Marketing, New Product Development, Damages. Bryan Cella, Cella, Lange & Cella, Walnut Creek, CA, on behalf of DuPont.

JTC Petroleum Company v. Koch Materials Company, et al. (United States District Court, Southern District of Illinois) (Expert Reports, Affidavit, Deposition, 1998). Issues: Restraint of Trade, Refusal to Deal, Conspiracy, Market Division, Monopolization, Bid Rigging, Damages. Glenn E. Davis, Armstrong, Teasdale, Schlafly, & Davis, St. Louis, Mo., on behalf of JTC.

Bristol Hotel Asset Company et al. v. Allianz Insurance Company, et al., (U.S. District Court, Southern District of FL). (Affidavit, 1998). Issues: Antitrust and Class Certification. Randall A. Hack, Lord, Bissell & Brook, Chicago, on behalf of defendants.

Marquette Bank, N.A. v. Jacobson et. al (First Judicial District, State of Minnesota) (Expert Report, 1998). Issues: Misappropriation of trade secrets, likelihood of damages. Jeffrey R. Ansel, Winthrop & Weinstine, Minneapolis, MN, on behalf of Marquette Bank.

Weather Shield Mfg., Inc. v. PPG Industries, Inc. (U.S. District Court, Western District of Wisconsin, Case No. 97-C-707-S) (Expert Report, 1998). Issue: Complaint rates in a product defect case. Allen A. Arntsen, Foley & Lardner, Madison, WI, on behalf of Weather Shield.

Dant Clayton Corp. v. Cotton and Allen, P.S.C. Cause No. 96-CI-00966 (Jefferson Circuit Court, Fifth Division, KY) (Affidavit, 1998). Issues: Accounting malpractice and damages. Robert M. Connolly, Stites & Harbison, Louisville, KY, on behalf of Cotton and Allen.

Nailco, Inc. v. OPI Products, et. al. (U.S. District Court, Eastern District of Michigan, Southern Division) (Affidavit in P.I. action, 1998). Issues: Termination of distributor of nail-care products. Alleged boycott, market definition (salon, mass market, and home sales of nail-care products), market power, barriers-to-entry, competitive effects, effects on terminated dealer. Kenneth J. McIntyre, Dickinson, Wright, Moon, Van Dusen & Freeman, Detroit, MI, on behalf of OPI.

In the Matter of Ciba-Geigy (Novartis) Corp. (Federal Trade Commission Administrative Trial) (Deposition and Administrative Trial Testimony, 1997). Issues: Misleading advertising, advertising substantiation, effects of advertising, lingering impressions, buyer behavior, marketing, effects of corrective advertising. Michael Denger and Phillip Rudolph, Gibson Dunn & Crutcher, on behalf of Ciba-Geigy (Novartis).

Beauty Center, Inc. v. Matrix Essentials, Inc. (U.S. District Court, District of NV) (Expert Report, 1997). Issue Antitrust, Distribution, Marketing, Damages. John Parker, Baker and Hostetler, Cleveland, on behalf of Matrix Essentials, Inc.

State of MN and BCBS of MN v. Philip Morris, et al., State of Minnesota, County of Ramsey, District Court, Second Judicial District (Expert Report and Deposition, 1997; Jury Trial Testimony 1998). Issues: Antitrust injury, market definition, collusion, conspiracy, monopolization. Peter Bleakly, Arnold and Porter, Washington, D.C., and Robert Schwartzbauer, Dorsey & Whitney, Minneapolis, MN, on behalf of defendants. [Scheffman testimony is briefly summarized in the book *Smoked: The Inside Story of the Minnesota Tobacco Trial*, MSP Books, 1998].

Marvin Lumber and Cedar Company, et al. v. PPG Industries, et al., U.S. District Court for the District of Minnesota (Expert Disclosure, 1997). Issues: Damages and lost profits, statistical methodology, consumer behavior, marketing. Stephen C. Tourek, Winthrop & Weinstine, Minneapolis, MN, on behalf of Marvin Windows.

Gulf States Toyota, Inc. et al. v. Republic Industries, et al., Texas Department of Transportation, Motor Vehicle Division, Administrative Proceeding (Affidavit, 1997). Issues: Effects of Republic's business plan and proposed acquisition of a Texas Toyota dealership on Toyota and the auto industry. Martin Beirne, Beirne, Maynard & Parsons, Houston, TX on behalf of Toyota.

National Emergency Services, Inc. v. Sterling, et. al. (Expert Report, 1997), U.S. District Court for the Western District of North Carolina. Issues: Market definition, monopolization. Frank Hirsch, Hunton & Williams, Charlotte, NC, on behalf of NESI.

Union Pacific acquisition of Southern Pacific, Rebuttal Verified Statement, before the Surface Transportation Board, Railroad Merger Application, April 1996. Timothy Hester, Covington & Burling, Washington, D.C., on behalf of Union Pacific.

1990-92 Cable Royalty Distribution Proceeding, Docket No. 94-3 CARP CD 90-92 (Expert's Report and Testimony, 1996). Issues: Rebuttal plus analysis of efficient and fair division of statutory royalties for programming carried on distant signals. Timothy Hester, Covington & Burling, Washington, D.C., on behalf of Public Broadcasting Service.

Brokerage Concepts, Inc. v. U.S. Healthcare, et. al (Expert's Reports, 1995-96 and Jury Trial testimony, 1996) U.S. District Court, Eastern District of Pennsylvania. Issues: Alleged tying and monopoly leveraging. Testimony on market definition, market share, competitive analysis, tying and leveraging, reciprocal dealing; purchasing, selling and vendor relations, RICO, tortious interference, fraud; and damages. Pat Kittredge and Dan Maher, Kittredge, Donley, Elson, Fullem & Embrick, Philadelphia, and Keith Dutil and Donna Dever, Stradley Ronon Stevens & Young, Philadelphia, on behalf of U.S. Healthcare.

Hilo et al. v. Exxon et al. (Affidavit, 1994 and Expert's Report, 1995) U.S. District Court Central District of California. Issues: alleged collusive activities of major oil companies, focusing on marketing. Testimony on market definition, barriers-to-entry, competitive analysis, monopolization, conspiracy, recent history of U.S. oil industry, factors leading to industry consolidation, exchange agreements and joint ventures, British Petroleum=s business strategies. Jeffery Cross, Kelley Drye & Warren, Chicago, on behalf of British Petroleum.

Concord EFS, Inc. et al. v. Deluxe Data Systems, Inc., et al. (Expert's Report, 1995) U.S. District Court, District of Maryland. Issues: alleged monopolization of electronic payment systems processing. Testimony on market definition, state of competition, monopolization, competitive effects, and damages. Robert Schwartzbauer, Dorsey & Whitney, Minneapolis, on behalf of Deluxe.

The Procter & Gamble Company v. Paragon Trade Brands, Inc. (Expert Witness Statement, Expert Report, and deposition on liability and damages, 1995) U.S. District Court, District of Delaware. Issues: antitrust counterclaim in patent enforcement actions in disposable diaper industry. Testimony on purpose and effects of patent laws, purposes and effects of patent enforcement, market definition, markets for innovation, state of competition, innovation, profitability, monopolization, predation, competitive effects, and damages. Timothy Hester, Covington & Burling, Washington, D.C., on behalf of The Procter & Gamble Company.

Nichols Motorcycle Supply, Inc. v. Dunlop Tire Corporation (Expert's Report and deposition, 1995) U.S. District Court for the Northern District of Illinois, Eastern Division. Issues: termination of a distributor of Dunlop motorcycle tires, alleged monopolization. Testimony on economics and business of distribution, market definition, monopolization, competitive effects, and damages. Ken Hoch and Robert Joseph, Sonnenschein, Nath & Rosenthal, Chicago, on behalf of Dunlop Tire Corporation.

Ezzo's Investments, Inc. and Ezzo Ebeido vs. Royal Beauty Supply, Inc., et al. (Expert's Report, 1995) U.S. District Court for Middle District of Tennessee. Issues: retailer of professional hair and personal care products was cut off, alleged monopolization. Testimony on market definition, monopolization, competitive effects, and damages. John Parker, Baker and Hostetler, Cleveland, on behalf of Matrix Essentials, Inc.

Commonwealth of Kentucky, et al. v. U.C. Milk Company, Inc., et al. (Expert's Reports and Deposition; 1994); U.S. District Court for the Western District of Kentucky, Owensboro Division. Issues: alleged rigging of bids for school milk in Western Kentucky. Testimony on market definition, bid rigging, and damages. J. Brook Latham, Burch, Porter & Johnson, Memphis, on behalf of Turner Dairies.

PSI Repair Services, Inc. v. Honeywell, Inc. (Deposition: 1994); U.S. District Court for the Eastern District of Michigan, Southern District, Judge Avern Cohn. Issues: alleged tying and monopolization involving maintenance of Honeywell industrial control equipment. Testimony on market definition, monopolization, tying, market power, damages, survey methods. Elliot S. Kaplan, Robins, Kaplan, Miller & Ciresi, Minneapolis, MN, on behalf of Honeywell.

Aramid Fiber Formed of Poly Para-Phenylene Terephthalamide from the Netherlands (Report and testimony, May 1994); the International Trade Commission proceeding on the aramid fiber (Kevlar) industry, like product, and injury. John Greenwald, Wilmer, Cutler & Pickering, Washington, D.C., on behalf of DuPont.

In the Arbitration of Eva Martens v. Sears, Roebuck and Co (April 1994, and other proceedings); Testimony on behalf of Sears in proceeding arising from Sears' discontinuing its catalog business and terminating its Catalog Sales Merchants' contracts. Testimony on Sears' basis for discontinuing business, termination of contract; the nature of the contracts with the Catalog Sales Merchants, and damages. Michael Stiegel, Arnstein & Lehr, Chicago, IL, on behalf of Sears.

Testimony in Opposition to H.B. 315, Ohio State Legislature (May 1993); Written and oral testimony before House Insurance Committee, Ohio State Legislature, opposing H.B. 315 that would force a merger of the three competing Blue Cross companies in Ohio. Michael Canter of Vorys, Sater, Seymour and Pease, Columbus, Ohio, on behalf of Community Mutual Insurance Company.

FTC v. Alliant Techsystems, Inc. and Olin Corporation (Affidavit, October 1992); U.S. District Court for the District of Columbia, Civil Action No. 92-2499-LFO, Judge Louis Oberdorfer. Issues: Preliminary Injunction action by FTC against attempted merger. Testimony on market definition, competitive effects, defense procurement, procurement strategies. Collier, Shannon, Rill & Scott (James Loftis), and Fried, Frank, Harris, Shriver & Jacobson (Ira Sacks), on behalf of Olin.

Shopper's Press v. Memphis Publishing Co.; U.S. District Court for the Western District of Tennessee - Western Division (Bench Trial testimony 1992). Issues: Alleged monopolization of print advertising "market." Trial testimony in May 1992 on monopolization, business practices and strategies in the newspaper and other industries, industry and competitor analysis of local advertising industry in Memphis. Baker & Hostetler, Cleveland (J. E. Thackeray and Paul Eyre), and Armstrong, Allen, Prewitt, Gentry, Johnston & Holmes, Memphis (S. Russell Headrick), on behalf of Memphis Publishing Co. (Scripps).

FERC Docket No. EC88-2-007. (Affidavit, February 1992). Analysis of market definition and competitive effects in connection with PacifiCorp/Utah Power & Light merger. Bill Young, Hunton & Williams, on behalf of PacifiCorp.

Greater Rockford Energy and Technology Corp., et al. v. Shell Oil Company, et al. (Deposition, 1992); U.S. District Court, Central District of Illinois - Danville Division. Alleged monopolization of gasohol "market" and alleged violations of Gasohol Competition Act. Testimony on monopolization. Deposition, Trial pending. Ross & Hardies, Chicago (Jeffery Cross) on behalf of Mobil.

FERC Public Conference on Electricity Issues, Docket No. PL91-1-000. Written comments filed on behalf of PacifiCorp, on merger review at the FERC, June 1991.

Procter & Gamble Company v. Kimberly Clark, Inc. (Deposition, 1991); U.S. District Court of Texas - Dallas Division. Issues: Alleged monopolization of disposable diaper "market" through alleged misuse of patent system and other practices. Deposition testimony on market definition, monopolization, industry analysis for the disposable diaper industry, strategic analyses of competitors in disposable diaper industry. Case settled. Covington & Burling, DC (Charles Buffon and Timothy Hester) on behalf of P&G.

Malone & Hyde v. Tennessee Department of Revenue (Deposition 1990); Tennessee Department of Revenue. Issues: minimum markup regulations on cigarette sales. Testimony on competitive effects of minimum markup regulations. Burch, Porter & Johnson, Memphis (J. Brooke Lathram) on behalf of Malone & Hyde.

Bodie-Rickett and Associates v. Mars, Inc. (Deposition, 1990); Western District of Tennessee, Western Division, Civil Action #87-2795-GB, 1990. Issues: Alleged monopolization of food brokerage services "market." Testimony on market definition, monopolization, rebuttal of expert econometric study. Burch, Porter & Johnson, Memphis (J. Brooke Lathram) on behalf of Mars.

Precision Piping & Instruments, Inc. v. Du Pont, et al. (Deposition, 1990); Southern District of West Virginia, Civil Action #A:87-0191. Issues: Alleged monopolization of pipefitting services "market." Testimony on market definition, monopolization. Steptoe & Johnson, Clarksburg, WV (Gordon Copland) on behalf of Du Pont.

FTC v. Ethyl, et al. (Testimony, FTC Administrative Trial, 1981). Issues: State of competition, facilitating practices. On behalf of FTC.

Government Appearances, Testimony:

"An Economist's Guide to Merger Enforcement in the U.S.," Canadian Competition Tribunal, 1988.

"On the Economic Causes and Effects of Takeovers," (Oral Testimony) House of Representatives, Representative Luken's Subcommittee, 1987.

Written and Oral Testimony on Merger Policy: Committee on Banking, Finance and Urban Affairs, Subcommittee on Economic Stabilization, House of Representatives, May 12, 1987.

"On the Economic Effects of Mergers" before United States House of Representatives Subcommittees on Economic Stabilization and on Transportation, Tourism, and Hazardous Materials, 1987.

SPEECHES, PAPER PRESENTATIONS, ETC.:

"Oil Company Mergers – A Review of the Industry and Recent History," FTC-DOJ-Western States Common Ground Conference, Reno, NV, May 1999.

"Antitrust in Dynamic Markets," Fundacion Gobierno y Sociedad, Buenos Aires, Argentina, April 1999.

Invited participant, "What is the Value of a Patent and of the U.S. Patent System?," U.S. Patent and Trademark Office Conference, October 1998.

Presentations to groups of CEOs of small to medium sized companies on pricing strategies and tactics.

Paper presentations at numerous academic meetings including the Strategic Management Society, American Economic Association, Econometric Society, Southern Economic Association, Industrial Organization Society, Western Economic Association

Speaker at Program: "Dealer Terminations in New York," Association of the Bar of the City of New York, June 1, 1998.

"Mergers: Skills Training for Private, Corporate, and Government Lawyers," (member of teaching faculty) ABA Antitrust Law Section Program, Washington, D.C. November 13-14, 1997.

"Rethinking Antitrust Regulation," Competitive Enterprise Institute, Washington, D.C., June 1997.

"The DOJ/FTC Health Care Guidelines and Business Reality," *Antitrust and Health Economics in a Managed Care Environment*, Institute for Health Services Research and Policy Studies, Northwestern University, and LECG, Inc., September 1996.

"The Economics and Law of Distribution," ABA Antitrust Section Spring Meetings, March 1996.

"The Economics and Law of Distribution," Chicago Bar Association, April 1995.

"Trends in the Economy and Credit," Nashville Credit Officers Association, March 1995.

Lecture on the DOJ Draft Intellectual Property Guidelines, Stanford Law School CLE Program on Antitrust and Intellectual Property, October 1994.

"The Economics and Reality of Industrial Policy," Vanderbilt Institute for Public Policy, 1994.

Speeches on Business Strategy, OGSM alumni groups.

FTC Bureau of Economics, Presentation on Research on the Soft Drink Industry, 1992.

Presentation at *The Cutting Edge of Antitrust: Market Power*, Antitrust Section of the American Bar Association, October 1991.

Lecture on Antitrust Policy at Harvard Law School, 1990.

ABA Spring Antitrust Meetings, 1985, 1986, 1988-90, 1992.

ABA Annual Meeting, 1989.

Council of ABA Antitrust Section, 1988.

Conference Board's "Antitrust Issues in Today's Economy," 1988.

Bar Association of City of New York, 1988.

Fraser Institute and University of Toronto School of Law, joint session on the Competition Act, 1988.

WZB and German Cartel Office, Berlin, 1988.

Carolina Economic Association, 1988.

1987 Competition Law Seminar, McCarthy and McCarthy - The Law and Economics Program, Faculty of Law, University of Toronto, 1987.

Small Business Legislative Council, 1987.

National Association of Business Economists, Capital Chapter, 1987.

Conference on "Firm Ownership and Competition," Center for Economic Policy Research, Graduate School of Business, Stanford University, 1987.

Bentley College 7th National Conference on Business Ethics, 1987.

Fourth Annual Business/Academic Dialogue, "American International Competitiveness,"

Karl Eller Center, University of Arizona, 1987.

Machinery and Applied Products Institute Conference on Economics, Business Management, and Government, 1987.

National Economists' Club, 1986.

3rd Annual Natural Gas Symposium, 1986.

National Science Foundation Symposium on Mergers and R & D Activity, 1986.

Business Roundtable on Divestiture, University of Kansas, 1983.

PUBLISHED PAPERS:

- 1 "Econometric Market Delineation" (with P. Spiller), *Managerial and Decision Economics*, March-April 1996, pp. 165-178. (Cited with the Highest Quality Rating by ANBAR Electronic Intelligence. Also to be reprinted in *Series in Managerial Economics*, J.M. Wiley publishers).
- 2 "Buyers, Market Power, and Market Definition," in *The Economics of the Antitrust Process*, M. Coate and A. Kleit, eds., Kluwer Academic Publishers, 1996, pp. 117-134.
- 3 "Antitrust, Economics, and Reality," in *The Economics of the Antitrust Process*, M. Coate and A. Kleit, eds., Kluwer Academic Publishers, 1996, pp. 239-254.
- 4 "The Regulation of Vertical Relationships in the U.S. Telecommunications Industry" (with R. W. Oliver), *Managerial and Decision Economics*, 1995, pp. 327-48. Also published in *Deregulating Telecommunications: The Baby Bells Case for Competition*, R. Higgins and P. Rubin, eds., John Wiley & Sons, Ltd., 1995.
- 5 "Is it Time to Create a New Theory of the Firm?: Discussion," 2 *Journal of Economics and Management Strategy*, Spring 1993, pp. 15-22.
- 6 "Making Sense of Mergers," 38 *Antitrust Bulletin*, Fall 1993, pp. 715-740.
- 7 "Introduction," in "Symposium on New 1992 Merger Guidelines," 38 *Antitrust Bulletin*, Fall 1993, pp. 473-478.

- 8 "Ten Years of Merger Guidelines: A Retrospective, Critique, and Prediction," 8 *Review of Industrial Organization*, 1992, pp. 173-190.
- 9 "Strategy and Vertical Relationships in the Soft Drink Industry" (with T. Muris and P. Spiller), 1 *Journal of Economics and Management Strategy*, No. 1, 1992, pp. 83-128.
- 10 "Statistical Measures of Market Power: Uses and Abuses," *Antitrust Law Journal*, 1992, Vol. 60, No. 3, pp. 901-919.
- 11 "Buyers' Strategies, Entry, and Competition" (with P. Spiller), 30 *Economic Inquiry*, July 1992, pp. 418-436.
- 12 "Application of 'Raising Rivals' Costs' Analysis to Antitrust," 37 *Antitrust Bulletin*, No. 1, 1992, pp. 187-206.
- 13 "The Antitrust Sentencing Guideline: Is the Punishment Worth the Cost?" (with Mark Cohen), 27 *American Criminal Law Review*, No. 2, 1989, 331-366.
- 14 "The FTC in the 1980s," (with J. Langenfeld), 5 *Review of Industrial Organization* #2, Summer 1990, 79-98.
- 15 "Innovation and U.S. Competition Policy," (With J. Langenfeld) *The Antitrust Bulletin*, Vol. 34, No. 1, 1989, 1-63.
- 16 "Empirical Approaches to Market Power," (with P. Spiller) Introductory Essay for a Special Issue of *Journal of Law and Economics* edited by Scheffman and P. Spiller, October 1989.
- 17 "The Application of Raising Rivals' Costs Theory to Antitrust," in ABA Antitrust Section Handbook on Economics, 1989.
- 18 "The Economics and Ethics of Adjusting to a New Competitive Environment: Mergers and Takeovers," *The Ethics of Organizational Transformation: Mergers, Takeovers and Corporate Restructuring*, R. Frederick and E. Petry (eds), Quorum Books, 1989.
- 19 "Innovation and U.S. Competition Policy," (with J. Langenfeld) in *Technology and Public Policy*, H. Hauser (ed), *Aussenwirtschaft*, University of St Gall, June 1988.
- 20 "Strategic Business Behavior and Antitrust" (with C. Holt), in R. Lerner and J. Meehan (eds) *Economics and Antitrust Policy*, Quorum Books, 1989.

- 21 "Cost-Raising Strategies" (with S. Salop), *Journal of Industrial Economics*, Vol. 36, September 1987, pp. 19-34.
- 22 "Facilitating Practices: The Effects of Advance Notice and Best-Price Policies" (with C. Holt), *Rand Journal of Economics*, Vol. 18, No. 2, Summer 1987, 187-197.
- 23 "Geographic Market Definition Under the Department of Justice Merger Guidelines" (with P. Spiller), *Journal of Law and Economics*, Vol. XXX, No. 1, April 1987, pp. 123-148. (Reprinted in *The Journal of Reprints for Antitrust Law and Economics*).
- 24 "The Effects of Oil Price Changes on Urban Structure: Some Theoretical and Simulation Results," (with J. Melvin) in *Planning for Changing Energy Conditions*, Energy Policy Studies, Vol. 4, J. Byrne and D. Rich (eds), *Transaction Books* (New Brunswick), 1988, pp. 215-246.
- 25 "Evolution or Revolution -- What is the Future of Antitrust?," (with J. Langenfeld) *Antitrust Bulletin*, Vol. 31, No. 2, Summer 1986, pp. 287-300.
- 26 "A Bidding Analysis of Special Interest Regulation: Raising Rivals' Costs in a Rent Seeking Society" (with S. Salop and W. Schwartz), in B. Yandle and R. Rogowsky (eds.) *The Political Economy of Regulation: Private Interests in the Regulatory Process*, FTC, 1984.
- 27 "Raising Rivals Costs" (with S. Salop), *A.E.R.*, Vol.73, No. 2, 1983, pp. 267-271.
- 28 "Advertising and Quality in Food Products: Some New Evidence on the Nelson Hypothesis" (with J. MacDonald and I. Whitten) in *Advertising and the Food System*, J. Connor and R. Ward (eds.), North Central Research Publication 287, University of Wisconsin - Madison, 1983.
- 29 "Comments on 'An Economic Definition of Predatory Product Innovation'" in *Strategy Predation, and Antitrust Analysis*, S. Salop (ed.), FTC, 1981 (Washington, D.C.), pp. 397-414.
- 30 "An Intercountry Comparison of Housing Market Trends in the 1970's" (with M. Slade) in *Proceedings of the BSA Seminar on House Price Determination*, M. Boleat (ed.), Building Societies Association, London, U.K., 64-85, 1981.
- 31 "A Theory of Development Controls in a Small City," (with M. Frankena), *Journal of Public Economics*, Vol. 15, 1981, pp. 203-234.

- 32 "Some Evidence on the Recent Boom In Land and Housing Prices," in *Urban Housing Markets: Recent Directions in Research and Policy*, L. Bourne and J. Hitchcock (eds.) University of Toronto Press, 1978, pp. 57-85.
- 33 "Urban Structure, Gas Prices and the Demand for Transportation," (with A. Robson), *Journal of Urban Economics*, Vol. 6, April 1979, pp. 148-156.
- 34 "The Crunch, the Boom and the Recreational Land Market," (with A. Robson), *Canadian Journal of Economics*, Vol. XI, No. 1, February 1978, pp. 33-55. Reprinted in *Appraisal Institute Magazine*, Vol. 23, Book 2, May 1979, pp. 33-40.
- 35 "Ownership Concentration and Market Power in Urban Land Markets," (with J. Markusen), *Review of Economic Studies*, Vol. XLV, No. 3, October 1978, pp. 519-526.
- 36 "Ownership Concentration in the Urban land Market: Analytical Foundations and Empirical Evidence," (with J. Markusen), in *Public Property? The Habitat Debate Continued: Essays on the Price, Ownership and Government of Land*, Fraser Institute, 1977.
- 37 "The Timing of Residential Land Development: A General Equilibrium Approach," (with J. Markusen), *Journal of Urban Economics*, Vol. 5, October 1978, pp. 411-424.
- 38 "The Aggregate Excess Demand Correspondence and the Structure of Economies with Externalities," *Review of Economic Studies*, Vol. XLII, No. 4, October 1975, pp. 597-604.
- 39 "A Definition of Generalized Correlation and Its Applications for Portfolio Analysis," *Economic Inquiry*, Vol. XIII, No. 2, March 1975, pp. 277-286.
- 40 "Some Remarks on the Net Production Possibilities Set in Models with Intermediate Goods," *Journal of International Economics*, Vol. 3, August 1973, pp. 281-296.
- 41 "Appendix A," in Samuelson and Merton, "A Complete Model of Warrant Pricing that Maximizes Utility," *Industrial Management Review*, Vol. 10, No. 2, Winter 1969.

PUBLISHED BOOKS:

- 1 Editor, Special Issue of 38 *Antitrust Bulletin*, "Symposium on the New 1992 Merger Guidelines," Special Issue on the 1992 DOJ/FTC Merger Guidelines, Fall 1993.
- 2 *Strategy, Structure, and Antitrust in the Carbonated Soft Drink Industry* (with T. Muris and P. Spiller), Quorum Books, 1993.
- 3 Co-editor, *Journal of Law and Economics*, Special Issue on Empirical Approaches to Market Power, (with P. Spiller), 1989.
- 4 Co-editor, *Antitrust Bulletin*, Special Issue on the Future of Antitrust, (with J. Langenfeld), Vol. 31, No.2, Summer 1986.
- 5 Co-editor, *Empirical Approaches to Consumer Protection Economics* (with P. Ippolito), FTC, March 1986.
- 6 *An Economic Analysis of the Impact of Rising Oil Prices on Urban Structure* (with J. Melvin), University of Toronto Press, 1983.
- 7 *Social Regulation in Markets for Consumer Goods and Services*, (with E. Appelbaum), University of Toronto Press, 1982.
- 8 *An Economic Analysis of Provincial Land Use Policies in Ontario* (with M. Frankena), University of Toronto Press, 1980.
- 9 *Speculation and Monopoly in Urban Development: Analytical Foundations with Evidence for Toronto* (with J. Markusen), University of Toronto Press, 1977.

UNREFEREED PUBLICATIONS:

- 1 "Bright Ideas, Big Money: Management and Valuation of Intellectual Property," (with W. Robert Thompson, Esq.) *The Owen Manager* Summer/Fall 1996.
- 2 "Statistical Measures of Market Power: Uses and Abuses," in *The Cutting Edge of Antitrust: Market Power*, Antitrust Section of the American Bar Association, October 1991.
- 3 "The Antitrust Guideline: Problems of Policy, Interpretation, and Application," (with M. Cohen), ABA Antitrust Section, Criminal Practice and Procedure Committee, July 1991.

- 4 Proposed "Policy Statement of Department of Justice and FTC Regarding Joint Research and Development Ventures," 1985.
- 5 "Merger Policy and Enforcement at the Federal Trade Commission: The Economist's View," *Antitrust Law Journal*, vol. 5/4, no. 1, 1985.
- 6 Contributions to "U.S. Department of Justice Vertical Restraints Guidelines," 1985.
- 7 Contributions to *Mergers in the Petroleum Industry*, FTC Report to Congress, 1982.
- 8 Contributions to *Post-Purchase Consumer Remedies*, FTC Staff Report, 1980.
- 9 Contributions to "Down to Earth," *Report of the Federal/Provincial Task Force on the Supply and Price of Serviced Land*, (Toronto) 1979.

UNPUBLISHED PAPERS:

"Realtime Oligopoly: An Analysis of Actual Transactions Data in Oligopoly Industries,"
(with M. Coleman).

"Aggregation Bias in Demand Estimation From Using Average Revenue" (with L. Froeb
and G. Werden).

"The Gains from Merger in the Electric Power Industry: The Pacificorp-UP&L Merger."

"The Function and Value of Brand Names" (with M. Cohen).

"The Law and Economics of Punitive Damages" (with M. Cohen)

"The Economics of Fraud" (with M. Cohen)

"The Financial Economics of the Commercial Aircraft Manufacturing Industry"